WE CLAIM:

1. A method of maintaining configuration synchronization, the method comprising:

a) dynamically determining a first set of commands having a first syntax supported by a first image of an Active unit but not supported by a second image of a Standby unit; and

b) transforming at least a first portion of the first set of commands into first transformed commands having a second syntax supported by the second image on the Standby unit.

2. The method of claim 1, wherein the second syntax is a lower-level syntax.

3. The method of claim 1, wherein the transforming step is performed by the Active unit.

4. The method of claim 1, further comprising:

c) determining a second portion of the first set of commands that cannot be transformed into the second syntax.

5. The method of claim 1, further comprising:

d) determining whether commands of the second portion need to be synchronized to the Standby unit.

6. The method of claim 1, wherein step b) is performed in multiple parts, each part involving a transformation between successive transformation levels.

7. The method of claim 1, wherein step a) comprises:

determining a second set of possible commands for the first image;

determining a third set of possible commands for the second image; and

comparing the second set to the third set to determine the first set.

8.   The method of claim 1, further comprising determining a Standby diff list of commands supported by the second image but not by the first image.

9.   The method of claim 1, further comprising the step of synchronizing the first transformed commands to the Standby unit.

10.   A method of maintaining configuration synchronization, the method comprising:

a) dynamically determining a first set of commands having a first syntax supported by a first image of an Active unit and supported by a second image of a Standby unit; and

b) transforming at least a first portion of the first set of commands into first transformed commands having a different syntax supported by the second image.

11.   The method of claim 10, wherein the different syntax is a higher-level syntax.

12.   The method of claim 10, wherein the transforming step is performed by the Standby unit.

13.   The method of claim 10, wherein step b) is performed in multiple parts, each part involving a transformation between successive transformation levels.

14.   A method of maintaining configuration synchronization between an Active unit and a Standby unit, the method comprising:

receiving, by the Active unit, a new command that was not previously part of an Active running configuration on the Active unit; and

determining whether the new command has a first
syntax that is supported by a Standby image of the
Standby unit.

15. The method of claim 14, further comprising the step
of synchronizing the command to the Standby unit if it is
determined that the first syntax is supported by the
Standby image.

16. The method of claim 14, further comprising the step
of determining whether the command is transformable to a
second syntax that is supported by the Standby image when
it is determined that the first syntax is not supported
by the Standby image.

17. The method of claim 16, further comprising the step
of transforming the new command to a transformed command
when it is determined that the command is transformable
to the second syntax that is supported by the Standby
image.

18. The method of claim 16, further comprising the step
of determining whether the command needs to be
synchronized to the Standby unit when it is determined
that the command is not transformable to the second
syntax that is supported by the Standby image.

19. The method of claim 17, further comprising the step
of synchronizing the transformed command to the Standby
unit.

20. The method of claim 18, further comprising the step
of invoking a policy function when it is determined that
the command is not transformable to the second syntax
that is supported by the Standby image.

21. A computer program embodied in a machine-readable medium, the computer program comprising instructions for controlling at least one network device to perform the following steps:

a) dynamically determining a first set of commands having a first syntax supported by a first image of an Active unit but not supported by a second image of a Standby unit; and

b) transforming at least a first portion of the first set of commands into first transformed commands having a second syntax supported by the second image on the Standby unit.

22. The computer program of claim 21, wherein the second syntax is a lower-level syntax.

23. The computer program of claim 21, wherein the transforming step is performed by the Active unit.

24. The computer program of claim 21, further comprising instructions for controlling the at least one network device to perform the following step:

c) determining a second portion of the first set of commands that cannot be transformed into the second syntax.

25. The computer program of claim 21, further comprising instructions for controlling the at least one network device to perform the following step:

d) determining whether commands of the second portion need to be synchronized to the Standby unit.

26. The computer program of claim 21, wherein step b) is performed in multiple parts, each part involving a transformation between successive transformation levels.

27. The computer program of claim 21, wherein step a) comprises:

determining a second set of possible commands for the first image;

determining a third set of possible commands for the second image; and

comparing the second set to the third set to determine the first set.

28. A computer program embodied in a machine-readable medium, the computer program comprising instructions for controlling at least one network device to perform the following steps:

a) dynamically determining a first set of commands having a first syntax supported by a first image of an Active unit and supported by a second image of a Standby unit; and

b) transforming at least a first portion of the first set of commands into first transformed commands having a different syntax supported by the second image.

29. The computer program of claim 28, wherein the different syntax is a higher-level syntax.

30. The computer program of claim 28, wherein the transforming step is performed by the Standby unit.

31. The computer program of claim 28, wherein step b) is performed in multiple parts, each part involving a transformation between successive transformation levels.

32. An apparatus for maintaining configuration synchronization, the apparatus comprising:

means for dynamically determining a first set of commands having a first syntax supported by a first image of an Active unit but not supported by a second image of a Standby unit; and

means for transforming at least a first portion of the first set of commands into first transformed commands having a second syntax supported by the second image on the Standby unit.

33.   The apparatus of claim 32, wherein the second syntax is a lower-level syntax.

34.   The apparatus of claim 32, wherein the transforming step is performed by the Active unit.

35.   The apparatus of claim 32, further comprising means for determining a second portion of the first set of commands that cannot be transformed into the second syntax.

36.   The apparatus of claim 32, further comprising means for determining whether commands of the second portion need to be synchronized to the Standby unit.

37.   An apparatus for maintaining configuration synchronization, the apparatus comprising:
        means for dynamically determining a first set of commands having a first syntax supported by a first image of an Active unit and supported by a second image of a Standby unit; and
        means for transforming at least a first portion of the first set of commands into first transformed commands having a different syntax supported by the second image.

38.   The apparatus of claim 37, wherein the different syntax is a higher-level syntax.

39.   The apparatus of claim 37, wherein the transforming step is performed by the Standby unit.

40. The apparatus of claim 37, wherein step b) is performed in multiple parts, each part involving a transformation between successive transformation levels.

41. An apparatus for maintaining configuration synchronization, the apparatus comprising:

at least one Active unit having a first image stored thereon, the at least one Active unit being configured to create a first list of commands supported by the first image;

a Standby unit having a second image stored thereon, the Standby unit being configured to:

create a second list of commands supported by the second image;

determine an Active diff list of commands on the first list but not on the second list; and

determine a Standby diff list of commands on the second list but not on the first list.

42. The apparatus of claim 41, wherein the at least one Active unit is further configured to:

generate a running configuration for the first image; and

determine a third list of commands that are part of the running configuration and part of the Active diff list.

43. The apparatus of claim 41, wherein the at least one Active unit is further configured to synchronize the running configuration to the Standby unit when the third list is a null set.

44. The apparatus of claim 41, wherein the Active unit is further configured to:

transform the third list of commands to the second syntax; and

synchronize the transformed third list of commands to the Standby unit.

45.   The apparatus of claim 41, wherein the apparatus comprises multiple Active units.

5   46.   The apparatus of claim 43, wherein the Standby unit is further configured to transform commands of the synchronized running configuration to a higher-level syntax.

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